

**WHAT IS CLAIMED IS:**

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1. An apparatus for speech recognition and character displaying in a mobile phone in a mobile telecommunication system, comprising:

5 an RF Module for processing an RF signal received from a base station ;  
a memory storing a speech/character conversion table having conversion data for use in converting voice data to character data;

a speech recognition and character conversion unit for converting a voice signal received from the base station to voice data using speech recognition and for  
10 converting the voice data to character data by referring to the speech/character conversion table;

a display for displaying the converted character data; and

a controller for providing overall control to the mobile phone, transmitting a speech recognition notification request message to the base station in a speech  
15 recognition and character display mode, and controlling the speech recognition and character display operation.

2. The apparatus of claim 1, wherein the base station recognizes that the mobile phone is in the speech recognition and character display mode upon  
20 receiving the speech recognition notification request message from the mobile phone.

3. The apparatus of claim 2, wherein upon receipt of the speech recognition notification request message, the base station transmits a  
25 corresponding voice information message to a corresponding caller.

4. A method for speech recognition and character displaying in a mobile phone in a mobile telecommunication system, comprising the steps of:

transmitting a speech recognition and character display notification request message to a base station;

5 receiving a voice signal from the base station;

converting the received voice signal to voice data using speech recognition;

converting the voice data to character data; and

displaying the converted character data on a display of the mobile phone.

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5. The method of claim 4, wherein the base station recognizes that the mobile phone is in the speech recognition and character display mode by receiving the speech recognition and character display notification request message from the mobile phone.

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6. The method of claim 5, wherein upon receipt of the speech recognition and character display notification request message, the base station transmits a corresponding voice information message to a corresponding caller.

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7. A method for speech recognition and character displaying in a mobile phone in a mobile telecommunication system, comprising the steps of:

determining whether predetermined key data has been received from a keypad of the mobile phone, upon receipt of a paging message;

25 transmitting a reverse connect order and a speech recognition and character display notification request message to a base station, upon receipt of the predetermined key data;

converting a received speech message of a caller to voice data using speech recognition and converting the voice data to character data; and displaying the converted character data on a display of the mobile phone.

5           8.       The method of claim 7, wherein the base station recognizes that the mobile phone is in the speech recognition and character display mode by receiving the speech recognition and character display notification request message.

10           9.       The method of claim 8, wherein upon receipt of the speech recognition and character display notification request message, the base station transmits a corresponding voice information message to a corresponding caller.

15           10.      An apparatus for speech recognition and character displaying in a base station in a mobile telecommunication system, comprising:

a radio MODEM for processing a signal received from a mobile phone ;

a memory storing a speech/character conversion table having conversion data for use in converting voice data to character data;

20           a speech recognition and character conversion unit for converting a voice signal to voice data using speech recognition and converting the voice data to character data, by referring to the speech/character conversion table; and

25           a controller for allocating radio resources, performing call processing with a corresponding second base station or a mobile switching center, controlling the speech recognition and character conversion operation, and transmitting converted character data in the form of a short message to the mobile phone.

11.       The apparatus of claim 10, wherein the base station is a base transceiver system.

12. A method for speech recognition and character displaying in a base station in a mobile telecommunication system, comprising the steps of:

transmitting a paging message to a corresponding mobile phone;

transmitting a speech recognition and character display information message to a caller initiating the paging message upon receipt of a speech recognition and character display notification request message from the mobile phone;

converting a voice signal from the caller to voice data using speech recognition and converting the voice data to character data; and

transmitting the converted character data in the form of a short message to the mobile phone.

13. A notification system for notifying a user of an incoming call through voice recognition in a mobile telecommunication system, comprising:

a memory for storing a speech/character conversion table for converting voice data to character data;

a speech recognition and character conversion unit for converting a voice signal received from a base station into character data based on the conversion table;

a controller for determining whether a voice recognition mode has been chosen by the user and informing the base station if the user has chosen the voice recognition mode,

wherein the controller displays the voice converted character data as a text message on a display if the user has chosen the voice recognition mode.

14. The notification system of claim 13, further comprising:

an RF module for processing an RF signal received from the base station or to be transmitted to the base station by radio.

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19. The notification system of claim 13, wherein the speech recognition and character conversion unit is located within the base station.